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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,830	12/20/2001	Mark A. Schubert	SP-1294.1 US	8964

20875 7590 07/01/2004

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EXAMINER

WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,830

Applicant(s)

SCHUBERT ET AL.

Examiner

Monique M Wills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 4 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements filed December 20, 2001 has/have been received and complies with the provisions of 37 CFR 1 .97, 1.98 and MPEP § 609.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "ASTM D2290", "ASTM D638", "ASTM E831" and "ASTM D648" are of uncertain meaning, rendering the claims vague and indefinite. It is unclear as to what testing methods are involved to determine tensile creep deformation, tensile modulus, coefficient of thermal expansion, heat deflection and tensile elongation.

Physical properties of the sealing material should be the same irrespective of the type of testing methods employed. Do different testing methods render different results? If not, why do the properties have to be determined, specifically, with ASTM methods?

In the event that ASTM testing standards are trademarks or trade names, where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112,

second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe physical properties of sealing material and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 12-13, 17-18, 21-26, 28-33 & 36-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Gordy U.S. Patent 5,198,314.

Gordy teaches, with respect to claims 1, 28, 31-33 & 38, an electrochemical cell comprising: a metal container with an open end (Fig. 11 & col. 1, line 57 – col. 2, line 13); negative electrode 134; positive electrode 125; electrolyte disposed within the container (col. 7, lines 5-10); seal member 12 disposed in the open end of the container for closing the cell, thereby sealing the electrodes and the electrolyte within the container (Fig. 6); wherein the seal member 12 comprises an injection-molded thermoplastic material (col. 1, lines 60-65) comprising a mixture of PPS and up to 50 wt % of polyethylene or polypropylene (col. 3, lines 55-60). With respect to claim 2, the polyolefin is polyethylene or polypropylene (col. 3, lines

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45-55). In re claim 3, the aromatic polymer is polyphenylene sulfide (col. 3, lines 55-60). Concerning claims 12 & 13, the polyolefin is up to 50 wt % of the thermoplastic material (col. 1, lines 60-65). With respect to claims 17 & 18, the electrochemical cell comprises a zinc anode, manganese dioxide cathode and potassium hydroxide electrolyte (col. 7, lines 1-15). The instant claims are anticipated by the prior art set forth. The limitation in claims 1 & 28, with respect to the polyolefin being a matrix, is considered to be an inherent property of the polyolefin as set forth in the prior art, because Gordy employs the same polyolefin sealing material set forth by Applicant. The limitation in claims 1 & 31, with respect to the aromatic polymer having a repeating aromatic functional group, is considered to be an inherent property of the aromatic polymer as set forth in the prior art, because Gordy employs the same PPS sealing material set forth by Applicant. The limitation in claim 4, with respect to the aromatic polymer comprising discrete phases in the polyolefin matrix, is considered to be an inherent property of the sealing material as set forth in the prior art, because the seal of Gordy is made by the same process as Applicant including: mixing a polyolefin and aromatic polymer and injection molding said mixture into to sealing gasket. The limitations in claims 21-26, 28-30, 32 & 36-37, with respect to the thermoplastic sealant having a tensile creep deformation, tensile modulus, coefficient of thermal expansion and heat deflection temperature within the ranges specified, are considered to be an inherent properties of the aromatic polymer as set forth in the prior art, because Gordy employs the same polyolefin/PPS sealing material set forth by Applicant. This rationale is in accordance with MPEP 2112.01, which states, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-7, 12-13, 15, 17-19, 21-32 & 36-38 rejected under 35 U.S.C. 102(e) as being anticipated by Schubert U.S. Pub. 2001/0014419.

The applied reference has a common inventor and assignment with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

With respect to claims 1, 28 & 31, Schubert teaches as electrochemical cell comprising: a steel container 14 with an open end; a negative electrode 18; positive electrode 24; and a seal member 32 disposed in the open end of the container for closing the cell, thereby sealing the electrodes and the electrolyte within the container; wherein the seal member 32 comprises an injection molded thermoplastic material (¶ 57), comprising a mixture of an aromatic polystyrene polymer and 5 to 40% by weight of a polyolefinic elastomer (¶ 20). See ¶15 and Figure 1. With respect to claims 2 & 32, the polyolefin is a polyethylene (¶ 0017). With

respect to claim 3, the aromatic polymer is polystyrene (§ 16). With respect to claims 5 & 6, the aromatic polymer is poly(phenylene oxide). See paragraph 21. With respect to claim 7, the aromatic polymer comprises an impact modifier (§ 16 and § 21), wherein the polyolefin functions both as the matrix and impact modifier. With respect to claims 12 & 13, the polyolefin comprises 5 to 40 weight percent of the thermoplastic material (§ 20). With respect to claim 15, the aromatic polymer comprises poly(phenylene oxide) (§ 21). With respect to claim 17, the electrolyte is an alkaline aqueous solution (§ 15). With respect to claim 18, the negative electrode is zinc, the positive electrode is manganese dioxide and the electrolyte is potassium hydroxide (§ 15). With respect to claim 19, the cell further comprises: a cover (30), current collector (20 & 36) and contact terminal (28); the cover (30) is disposed in the open end of the container (14); the current collector (20 & 36) is electrically connected to the anode and extend through the aperture in the seal member (32) so as to electrically connected to the contact terminal (§ 20). See also, Figure 1 and paragraph 15. The sealing gasket (32) embraces Applicant's hub, because the instant disclosure, at page 7, lines 19-25, describes a "hub" as the central sealing portion of the gasket around the current collector. Schubert illustrates a gasket circumscribing the current collector, which is Applicant's "hub". With respect to claim 27, the seal further comprises a pressure relief mechanism that ruptures to release internal pressure from the cell (§ 15). With respect to claim 38, the polyolefin is a polyethylene and polystyrene (§ 17). The instant claims are anticipated by the prior art set forth.

The limitation in claims 1, 28 & 31 with respect to the polyolefin being a matrix, is considered to be an inherent property of the polyolefin as set forth in the prior art, because Schubert employs the same polyolefin sealing material set forth by Applicant. The limitation in claims 1 & 28, with respect to the aromatic polymer having a repeating aromatic functional

group, is considered to be an inherent property of the aromatic polymer as set forth in the prior art, because Schubert employs the same polystyrene sealing material set forth by Applicant. The limitation in claim 4, with respect to the aromatic polymer comprising discrete phases in the polyolefin matrix, is considered to be an inherent property of the sealing material as set forth in the prior art, because the seal of Schubert is made by the same process as Applicant including: mixing a polyolefin and aromatic polymer and injection molding said mixture into to sealing gasket. The limitation in claim 19, with respect to the sealing member forming a compressive seal between the container and the cover, and a hub that forms a compressive seal around the current collector, is considered to be an inherent function of the gasket seal set forth by the prior art, because the seal of Schubert is a liquid-tight seal that prevents electrolyte from leaking from the battery. Therefore, the gasket must inherently form a compressive seal around the current collector and cover, in order to contain liquid electrolyte. The limitations in claims 21-30, 32 & 36-37, with respect to the thermoplastic sealant having a tensile creep deformation, tensile modulus, coefficient of thermal expansion and heat deflection temperature within the ranges specified, are considered to be an inherent properties of the aromatic polymer as set forth in the prior art, because Schubert employs the same polyolefin/polystyrene sealing material set forth by Applicant. This rationale is in accordance with MPEP 2112.01, which states, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658. Therefore, the instant claims are anticipated by Schubert.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-11, 14 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert U.S. Pub. 2001/0014419.

Schubert teaches an impact modified polystyrene seal as described in §102(e), hereinabove. The reference teaches polystyrene individually mixed with a polyolefin impact modifier or styrene-ethylene/propylene-styrene (S-EP-S) block polymers (§ 17).

The reference is silent to: the impact modified aromatic polymer comprising discrete phases in the polyolefin matrix (claim 8); the impact modifier being styrene/polyolefin block copolymer (claim 9); the thermoplastic resin further comprising a compatibilizer (claim 10); the compatibilizer comprising a block copolymer having at least one block, wherein a first block end is soluble in the polyolefin and a second block end is soluble in the aromatic polymer (claim 11); the polyolefin comprising at least 50 wt % of the thermoplastic material (claim 14); and that the hub is not compressed between the cover and the current collector (claim 20).

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ an impact modifier, aromatic polymer and polyolefin composition, because even though Schubert teaches the aromatic polymer with the polyolefin or, alternatively, with a block polymer impact modifier, it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of

combining them flows logically from their having been individually taught in the prior art.” In *re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, in accordance with MPEP §2144.06, it would have been obvious to employ polystyrene in combination with the polyolefin matrix and block copolymer, because the idea of combining each polystyrene/impact modifier composition flows logically from their having been individually taught in the prior art, for the same purpose of making polystyrene gaskets (claims 8 & 9).

As to employing the polyolefin at least 50 wt % of the thermoplastic material, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the instant resin percentage, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In *re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The skilled artisan recognizes that the amount of polyolefin directly affects toughness of styrenic polymers (claim 14). See Schubert at paragraph 17.

With regards to the thermoplastic material comprising a compatibilizer with a first block end being soluble in the polyolefin and the second block end being soluble in the aromatic polymer, products of identical chemical composition cannot have mutually exclusive properties, because a chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In *re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). In the instant case, it is reasonable to expect the S-EP-S impact modifier of Schubert to possess said compatibilizer and solubility characteristics (claims 10 & 11), because the block polymer is the same as employed by Applicant. See the instant disclosure at page 10, lines 15-25.

With respect to the impact modified aromatic polymer comprising discrete phases in the polyolefin matrix, it is reasonable to expect the polystyrene blend of Schubert to possess said characteristics, as products of identical chemical composition cannot have mutually exclusive properties. See *In re Spada*.

With respect to claim 20, although Schubert does not expressly disclose that the hub is not compressed between the cover and the current collector, it would have been obvious to one having ordinary skill in the art at the time the invention was made, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 & 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert 20014/0014419, in view of Shuichi et al. JP 10-050278.

Schubert teaches a seal for cells containing alkaline electrolytes as described in §102(e) above, including that the aromatic polymer comprises poly(phenylene oxide) and a compatibilizer (claims 34 & 35). See citation above.

Schubert is silent to the polyolefin comprising polypropylene-based material (claims 16 & 33).

Shuichi teaches that it is conventional to employ impact modifiers such as polypropylene to modify polystyrene sealing gaskets. See abstract.

Schubert and Shuichi are analogous art, because they are from the same field of endeavor, namely, fabricating polystyrene impact modified sealing gaskets for electrochemical cells.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ polypropylene of Shuichi in the sealing gasket of Schubert, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. In re Leshin, 125 USPQ 416.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

06/25/04


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